Role stress and role ambiguity in new nursing graduates in Australia

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Abstract
The first few months of nursing have the potential to be the most challenging and stressful for new nursing graduates. The purpose of the present study was to examine sources of, and changes in, role stress 2–3 months after employment, and 11–12 months later in new graduate nurses. This study also investigated the relationship between job satisfaction and role stress. A factor analysis demonstrated that role ambiguity was the most salient feature of role stress in the first few months, while 10 months later, role overload was the most important factor explaining variance in role stress scores. There was no significant change in role stress scores over time. For the first survey, job satisfaction was significantly negatively correlated with role ambiguity and role stress. In the second survey there was still a significant negative correlation between role ambiguity and job satisfaction, but no significant correlation between role overload and job satisfaction. The findings are discussed in terms of implications for nursing education, practice and future research.

Key words job satisfaction, longitudinal study, new nursing graduates, role ambiguity, role overload, role stress, stress reduction strategies.

INTRODUCTION
The experience of role stress in new nursing graduates is relevant to nursing education and practice for various reasons. First, it informs education about whether new graduates are adequately prepared for clinical practice. Second, there is a change in societal attitudes about nursing as a career (Hemsley-Brown & Foskett, 1999), with a decline in enrollments in undergraduate nursing degrees, and therefore a need to create sustainable nursing (Chang & Daly, 2001). Third, the change in health care structure and the nature of patient treatment such as managed care, reductions in lengths of hospital stays, increased patient acuity, new technologies and focus on cost-effective quality of care have resulted in increased workloads for nurses (Garrett & McDaniel, 2001). The increased demands have negative consequences for nurses and patient care and, as discussed below, are major factors for the nursing shortage currently being experienced. This has relevance to the recruitment and retention of new graduates.

ROLE STRESS IN NURSES
Nurses who are stressed have higher absenteeism rates, lower work satisfaction and are more likely to voluntarily leave the organization (Larson, 1987; Callaghan & Field, 1991). They have more conflicts with co-workers (MacNeil & Weisz, 1987) which only escalates the problem as aggression from colleagues has been found to be a major source of stress for nurses (Farrell, 1999). They also suffer psychologically, in terms of feelings of inadequacy, self-doubt, lowered self-esteem, irritability, depression, somatic disturbance, sleep disorders and burnout (Foxall et al., 1990). These responses compromise the quality of
care they provide and results in reduced patient satisfaction (Janssen et al., 1999; Garrett & McDaniel, 2001).

Role stress may be viewed as the consequence of disparity between an individual’s perception of the characteristics of a specific role and what is actually being achieved by the individual currently performing the specific role (Lambert & Lambert, 2001). Thus, role stress occurs when there is incongruence between perceived role expectations and achievement. Burnout is defined as a syndrome of emotional exhaustion, depersonalization and reduced personal accomplishment (Maslach & Jackson, 1986). Schaufeli (1990, cited in Janssen et al., 1999) conducted a literature review of burnout, and found that burnout is strongly related to work overload, a lack of social support and role stress.

Over the past two decades a considerable amount of research has been conducted on role stress in nurses. A literature review conducted by Lambert and Lambert (2001) found that most of the studies investigating role stress and nursing have found work environment factors to be involved. For example, the experience of role stress is related to having little control in one’s job, high job demands and lack of support from peers (Chapman, 1993; Fong et al., 1993; Glass et al., 1993; Webster & Hackett, 1999; Cheng et al., 2000). Other studies have found that grieving, being required to work on different wards, lack of essential resources including nursing staff and work overload to be major factors (Foxall et al., 1990; Frisch et al., 1991; Snape & Cavanagh, 1993; Hatcher & Laschinger, 1996; Murray, 1998).

Although there is a lack of Australian research in this area, one of the key findings of recent focus group research commissioned by the Australian Government was that the increased turnover and acuity of patients without a concomitant increase in staffing levels was a major source of stress. Increased levels of responsibility and roles as well as performing duties outside their specialty arising from reduced staffing levels were also great sources of stress. Furthermore, new technologies and teaching others to use them as well as increased record-keeping and data collection practices profoundly increased workload and pressures. As a result, the nature of nursing is more stressful, less satisfying and offers fewer intrinsic rewards than previously. Many nurses felt they could no longer cope with the increasing demands placed on them, resulting in increased turnover and many nurses seriously contemplating leaving (Buchanan & Considine, 2002). Other Australian research has also found work overload to be a major source of stress in nurses (Healy & McKay, 1999).

**ROLE STRESS IN NEW GRADUATES**

The transition from student nurse to professional nurse practising in a hospital organization is a turning point for the new graduate. During the first year, the student nurse experiences a change in status to a professional nurse which produces role stress (Jasper, 1996; Kelly, 1996; Prebble & McDonald, 1997). The first 3–6 months has the potential to be the most challenging and stressful period of adjustment for registered nurses (Godinez et al., 1999; Greenwood, 2000; Jarvis, 2000). The psychological stress experienced includes anxiety as a result of attempting to cope with the challenges of the new role (Allenach & Jennings, 1990). Role ambiguity, that is, the lack of clear consistent information about the behavior expected in a role (Kahn et al., 1964) may be experienced due to a lack of clear responsibilities for the new graduate (Brief et al., 1979; Kramer, 1985; Horsburgh, 1989). Other researchers have found that lack of confidence (Speeding et al., 1981; Kramer, 1985), self-expectations and unrealistic expectations of other clinical staff (Perry, 1985 unpubl. data; Resler, 1988 unpubl. data; Kelly, 1996), lack of support (Hamel, 1990 unpubl. data; Hartshorn, 1992), adjusting to shiftwork (Horsburgh, 1989), the sudden increase in responsibility and awareness of individual accountability (Jasper, 1996; Walker, 1998; Gerrish, 2000), adjustments such as coping with their beginning level of skill as a registered nurse, and the gradual acquisition of skills and experience as a registered nurse (Jasper, 1996) are major reasons for stress in new graduates. Oermann and Moffitt-Wolf (1997) found that the stresses identified by new graduates most frequently were lack of experience as a nurse, interactions with physicians, lack of organizational skills and new situations and procedures. Walker (1998) found that nurses identified accepting responsibility, accepting their level of knowledge, working as a team member, maintaining professional standards, and differences in workplace conditions were the stressful issues faced by new graduates. Gerrish (2000) also found managerial responsibilities were a cause of considerable anxiety.

Conflict between graduates’ own ideals and values developed during training and the actual practice of a registered nurse has also been reported as a major source of stress for new nursing graduates (Jasper, 1996; Reutter et al., 1997). For example, the emphasis on performing tasks and adhering to ward routines rather than meeting the patients’ needs produces conflict (Jasper, 1996; Kelly, 1996). The theory-practice gap is also a common problem that surfaces for the neophyte, where there is a mismatch between that learned in the classroom and what actually occurs in
responsible for initiating strategies to counter nega-
itive consequences such as high voluntary graduate
staff turnover.

**METHOD**

**Subjects**

Participants in the first survey comprised 154 (repres-
enting a response rate of 77%) tertiary graduates from 13 institutions in New South Wales, Australia, who had been working for 2–3 months in one of four teaching hospitals. The majority of graduates were single, female (97%) and between 20 and 21 years of age (86%). The remainder were between 22–43 years of age. The majority of respondents had worked either in nursing homes or hospitals prior to their reg-
istration. They had 1–3 weeks orientation in their workplace. Graduates were rotated every 3–4 months to various acute medical and surgical wards during their first year of employment. Graduates were assessed 10–11 months later, with 110 of the initial 154 (71%) returning completed surveys. Thus, the final sample size assessed over time was 110 subjects.

**Measures**

The questionnaire developed for the present study was used to examine sources of role stress and changes in role stress 2–3 months after employment, and 11–12 months later. The survey administered 11–
12 months later had an additional subscale assessing the strategies employed to reduce role stress. The questionaire consisted of eight subscales measuring graduates’ perceptions of the undergraduate course, the importance of five roles of the nurse, job satisfac-
tion, role stress and strategies for coping. This report is concerned with the role stress and strategies for coping aspects of the survey.

**Role stress**

The eight items in this subscale were adapted from a study employed by Mohrman et al. (1978). Their instrument was an adapted version of the Job-related Tension Index developed by Kahn (1964). Thus, con-
tent validity was established by using items that have been used in other studies of similar research. Con-
tent validity was also established by conducting a pilot study of 10 new graduates. All felt that the con-
tent of the measuring instruments had relevance and were adequate for the constructs being measured.

A five-point Likert scale (never, rarely, sometimes, often, and very often) was used to measure role ambi-
guity and role overload. The role ambiguity questions
were in the direction of role clarity, with higher scores representing higher role ambiguity. Role conflict was defined as the degree of incongruity in terms of incompatibility in role requirements and may result in various types of conflict. Role overload is defined as the result of an individual being expected to complete a wide variety of tasks in insufficient time. The role overload questions were in the direction of insufficient time to complete a wide variety of tasks. Higher scores represent higher role overload. These definitions are consistent with previous research conducted in this area (Kahn et al., 1964; Rizzo et al., 1970). The eight items are listed in Appendix 1. These questions were used because they have been established as factorially identifiable and independent (Kahn et al., 1964; Mohrman et al., 1978). Factor analysis confirmed the two factors which correspond to role ambiguity and role overload, establishing construct validity (see Results). Test-retest reliability of \( r = 0.84 \) was established on this instrument two weeks apart in a sample of 10 new graduate nurses. Internal consistency reliability was found to be moderately high \( (r = 0.8) \) as measured by Cronbach’s alpha.

**Strategies to reduce role stress**

Concerning the subsection relating to strategies used to reduce role stress, 11 strategies were identified from the literature (Folkman & Lazarus, 1980; Hobbs, 1985; Dewe, 1987; Lawrence & Lawrence, 1988; Scalzi, 1988). The items are listed in Appendix 2. Graduates were also asked to indicate on a five-point Likert scale how often these strategies were used (ranging from never to very often). The overall effectiveness of the strategies used to reduce role stress was also rated on a five-point Likert scale (ranging from very effective to not at all effective). Factor analysis identified four factors explaining effective strategies. Cronbach’s alpha internal consistency estimate of this instrument was moderate, with a reliability coefficient of 0.70. In addition, the credibility of survey research also rests with an adequate response rate, which was achieved in the present study.

**Job satisfaction**

Job satisfaction was measured according to seven factors which were derived from the pilot study and from the literature. Respondents were asked to rate their satisfaction on a five-point Likert scale (ranging from low to very high) with the following: salary, autonomy, work itself, holidays, recognition of ability, status, and interest. A test-retest reliability measure was conducted, resulting in a coefficient of 0.89. In addition, the internal consistency estimate was 0.72 using Cronbach’s alpha. Thus, this scale had a moderately high degree of reliability.

**PROCEDURE**

Following a pilot study of 20 respondents to validate the content and refine the study, the present study was conducted at two intervals (approximately 10 months apart) using the survey questionnaires described previously. A survey of new tertiary graduates was conducted between two and three months after employment, in four major teaching hospitals. Lists of the wards and names of graduates were provided by the nursing administration from each hospital. The survey, with a cover letter explaining the study and seeking consent, was hand-delivered to registered nurses on the wards of four major hospitals in Sydney, by a hospital administrator in three hospitals, and by the researcher in another hospital. To ensure the anonymity and confidentiality of responses, subjects were informed that they would be given an identification number and no names would be attached to the survey. Their responses would be coded so that they could not be identified. Graduates were asked to place the completed questionnaire in the envelope provided and return it to a locked mail box in nursing administration, with the exception of one hospital where the box was kept in the Nursing Unit Manager’s (NUM) office. To ensure an adequate return rate, subjects who did not return a questionnaire within three weeks of the first mailing were sent a follow-up letter through the same system with another questionnaire. Assistant directors of nursing or assistant research administrators were also contacted by telephone to ask them to remind the graduates and NUM to return the completed questionnaires. The second survey, 10 months later, was conducted using the same procedure.

**RESULTS**

**Differences in role overload and role ambiguity over time**

Table 1 shows the mean scores for the eight items that correspond to role stress. Mean scores show moderate levels of stress. A repeated measures analysis of variance test was used to determine if there were any changes in graduates’ overall role overload (last three items in Appendix 1) or role ambiguity scores (first five items in Appendix 1) over time. There were no significant differences over time for role stress.
Role stress in Australian nursing graduates

Table 1. Mean scores for the eight items that correspond to role stress (a higher score indicates higher stress levels)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean score (1st survey) (range 1–5)</th>
<th>Mean score (2nd survey) (range 1–5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role ambiguity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Too little authority</td>
<td>2.9</td>
<td>2.9</td>
</tr>
<tr>
<td>Lack of clarity</td>
<td>2.8</td>
<td>2.7</td>
</tr>
<tr>
<td>Lack of information</td>
<td>2.8</td>
<td>2.8</td>
</tr>
<tr>
<td>Unable to influence others</td>
<td>3.0</td>
<td>3.1</td>
</tr>
<tr>
<td>Not knowing what is expected</td>
<td>2.7</td>
<td>3.0</td>
</tr>
<tr>
<td>Role overload</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No time to do everything</td>
<td>3.1</td>
<td>3.6</td>
</tr>
<tr>
<td>Amount of work interferes with work</td>
<td>3.2</td>
<td>3.4</td>
</tr>
<tr>
<td>No time to do the job</td>
<td>3.1</td>
<td>3.3</td>
</tr>
</tbody>
</table>

Table 2. Variance explained by factor structure role stress in first and second surveys

<table>
<thead>
<tr>
<th>Factor</th>
<th>Eigen values</th>
<th>Variance (%)</th>
<th>Cumulative percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>First survey</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Role ambiguity</td>
<td>3.3</td>
<td>42.3</td>
<td>42.3</td>
</tr>
<tr>
<td>2. Role overload</td>
<td>1.4</td>
<td>17.9</td>
<td>60.1</td>
</tr>
<tr>
<td>Second survey</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Role overload</td>
<td>3.3</td>
<td>42.3</td>
<td>42.3</td>
</tr>
<tr>
<td>2. Role ambiguity</td>
<td>1.2</td>
<td>15.7</td>
<td>58.0</td>
</tr>
</tbody>
</table>

Table 3. Correlations between role ambiguity, role overload and job satisfaction

<table>
<thead>
<tr>
<th>Role overload</th>
<th>Job satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>First survey</td>
<td></td>
</tr>
<tr>
<td>Role ambiguity</td>
<td>0.43**</td>
</tr>
<tr>
<td>Role overload</td>
<td>-0.22*</td>
</tr>
<tr>
<td>Job satisfaction</td>
<td>—</td>
</tr>
<tr>
<td>Second survey</td>
<td></td>
</tr>
<tr>
<td>Role ambiguity</td>
<td>0.44**</td>
</tr>
<tr>
<td>Role overload</td>
<td>0.06</td>
</tr>
<tr>
<td>Job satisfaction</td>
<td>—</td>
</tr>
</tbody>
</table>

* Significant at P<0.001; * significant at P<0.05.

Factor analysis of role stress

Factor analysis using principal components analysis followed by orthogonal rotation was used to identify the factors that explained role stress. Analysis of the first survey indicated that two factors corresponded to role ambiguity and role overload. The transition from student to registered nurse was associated with feelings of role overload (contributing 42.3% of variance) and role ambiguity (contributing 17.9% of variance). Therefore, 60% of the variance in scores was explained by these two factors (Table 2). These findings indicate that the transition from student to registered nurse was associated with feelings of role overload and role ambiguity, with role ambiguity the most important factor initially, and role overload the most important factor 10 months later.

Relationship of job satisfaction to role overload and role ambiguity

Pearson Product Moment Correlation coefficients were used to test the relationship of role overload and role ambiguity to job satisfaction (Table 3). For the first survey, job satisfaction was significantly negatively correlated with role ambiguity and role stress. In the second survey there was still a significant negative correlation between role ambiguity and job satisfaction, but no significant correlation between role overload and job satisfaction.
Strategies employed to reduce role stress

Factor analysis using principal components analysis followed by orthogonal rotation confirmed four factors that explained the types of strategies employed by the graduates. These corresponded to ‘alternative activities to reduce stress’, ‘wait and see’, ‘deal with the problem’ and ‘negative activities’. Almost 60% of the variance was accounted for by all four factors. Factor one (26.4% of variance) involved positive strategies and comprised the first five facets listed in Appendix 2. Factor two (12.6% of variance) consisted of the next three items, factor three (11% of variance) incorporated the next two facets, while factor four (9.5% of variance) embraced the last item listed in Appendix 2.

Effectiveness of strategies used

Approximately 33% of the graduates perceived that the strategies they used to reduce role stress were effective, whereas 60% believed the strategies were moderately effective. Fifteen percent felt the strategies they used were not effective and almost 1% felt it was not at all effective in reducing role stress. No graduate perceived the strategies they used were very effective.

DISCUSSION

This research examined the socialization process of new graduate nurses who studied under the university-based system. Factor analysis identified two factors that explained role stress: role ambiguity and role overload. In the first few months, role ambiguity was the salient factor, while 10 months later role overload was a greater contributor to stress than role ambiguity. The present study provides empirical evidence for the existence of role ambiguity and role overload as adapted from Kahn et al. (1964) and the work of Mohrman et al. (1978).

Although factor analysis showed a reversal of factors over time, there were no significant differences in mean role ambiguity and role overload scores over time. This finding is in contrast to Snyder’s (1982) findings, who found that role stress increased between 1–6 months on their first jobs. However, this study is consistent with the findings of Boyle et al. (1996), who found no change in role ambiguity or role conflict from one to six months of employment in new graduates working in critical care. Boyle et al., however, did find that positive precepting relationships were associated with less role conflict and role ambiguity over time. A possible explanation for the lack of change in role ambiguity in the current study was that graduates were frequently subjected to rotation of wards every 3–4 months. Role ambiguity is further increased by the fact that each ward is a speciality unit in the hospital and has different personnel and unique patient management. Graduates not only have to adjust to the nursing role, but adapt to the organization within relatively complicated social networks.

Role overload and ambiguity were negatively related to job satisfaction in the first few months of employment. This supports the research of others (Blegen, 1993; Duquette et al., 1994; Oermann & Bizek, 1994) who found that role conflict and role ambiguity were negatively related to job satisfaction. However, the current study found that in the second survey, role overload was not significantly related to job satisfaction. In spite of the overload prevalent in the role of registered nurses, many of the graduates did not relate this to job satisfaction after 11–12 months of employment. Scalzi (1990) found similar results in top level nurse administrators in hospitals in the USA. It appears to be easier for graduates to deal with role overload after one year of employment. This may be a reflection of the graduates’ coping abilities and experience gained in their role that can ultimately make a difference in dealing with problems in the work environment. Furthermore, almost 84% of the graduates believed the strategies they used were moderately effective in reducing role stress. The strategies used were similar to those used by nurse administrators and other health professionals in the literature (Hobbs, 1985; Dewe, 1987; Scalzi, 1988).

This study also found that the experience of role ambiguity was related to job dissatisfaction over the 12 months. Transition in their new roles was associated with lack of clear, consistent information about the role. Also, conflicting role expectations were demanded of them. Other research has found role ambiguity to be a greater influence for the person to leave the organization than role conflict (Rogers & Molnar, 1976). On a positive note, the mean scores on the role stress items in the present study suggest moderate levels of stress rather than severe. Madjar et al. (1997), in a major Australian study of newly graduated nurses, found that the majority of participants felt that the transition was worthwhile and culminated in a sense of achievement.

The following implications and recommendations for nursing arise from this study. Nurse managers should not only assess the impact of levels of role conflict and ambiguity on nurses’ adjustment to their role, but the impact of these factors on new gradu-
mates’ working environment. Furthermore, NUM should use management interventions to enhance individual coping strategies. NUM should delineate the specific roles of the new graduate and other staff to help new graduates adjust to their role and to the organizational environment. Several studies have found that effective orientation, preceptorship and/or mentoring programs (i.e. new graduates attached to senior colleagues for psychological support, clinical instruction and supervision) enhance recruitment and retention of graduate nurses and facilitate the transition from student to professional nurse (Allanach & Jennings, 1990; Andersson, 1993; Boyle et al., 1996; Brans, 1997; Oermann & Moffitt-Wolf, 1997; Prebble & McDonald, 1997). Greenwood (2000) highlights research showing the following factors which facilitate the transition of new graduates: formal unit orientation programs; a unit ‘climate’ of open communication; preceptor programs; the timely provision of constructive feedback; assignment congruence (i.e. not being given tasks beyond their sphere of competence); participative, democratic governance; appropriate advice and guidance from senior staff and; continuing staff development opportunities. Thus, a supportive environment which accommodates incremental development in the gaining of skills and the management of patients is the goal (Greenwood, 2000).

In order for graduates to gain positive reinforcement from their work by seeing the results of their input, and therefore increasing retention rates, they need to be assigned an appropriate patient load that allows them to provide for the physical and psychological needs of the patient (Chang & Daly, 2001). Employers should also examine their staffing levels in light of the perpetual role overload and greater responsibilities experienced by the graduates. To increase graduates’ confidence in their work role and reduce stress, perhaps a 6–9 month clinical rotation would be preferable to the current 3-4 month rotation.

Understanding the effects of role transition is important to nurse administrators and nurse educators as it will not only assist future graduates in the clinical domain, but shed light on the efficacy of different aspects of tertiary nursing curricula and teaching methods. By identifying issues faced by nurses in this area, nursing education can better target programs to prepare students for the ‘reality shock’ they may face. Educators can assist students to develop effective coping strategies to deal with stress.

The findings of the present study also make a contribution to the development of various theories associated with the overall socialization process and role adjustment of tertiary nursing graduates into the workforce. Future research should investigate the socialization of nurses over several years to determine whether particular variables (e.g. preceptorship, demographic or psychological characteristics, pattern of patient care assignments) are associated with successful transition. Ultimately it is hoped that such research will make nursing more appealing, rewarding and increase retention of staff as well as enrollments in nursing as a career.

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### APPENDIX 1

The eight items used in the subscale which were adapted from a study employed by Mohrman et al. (1978).

**Role ambiguity**
1. Feeling that you have too little authority to carry out the responsibilities assigned to you
2. Lack of clarity of job description and responsibilities
3. Lack of information needed to carry out your job
4. Thinking that the amount of work you have to do may interfere with how well it gets done
5. Not knowing just what the people you work with expect of you

**Role overload**
6. Feeling that you don’t have enough time to do everything that others ask you
7. Feeling that you don’t seem to have enough time to get things done
8. Feeling unable to influence your immediate superiors’ decisions and actions that affect you

### APPENDIX 2

List of the subsection relating to strategies used to reduce role stress. Eleven strategies were identified from the literature.

Strategies used to reduce role stress:

**Factor 1**
1. Ask advice from peers/colleagues
2. Develop a plan of action and follow it
3. Clarify my responsibility in relation to the problem
4. Use personal strategies like exercise or recreational activity
5. Stand my ground and fight for what I want

**Factor 2**
6. Keep my feelings to myself
7. Accept sympathy and understanding from someone
8. Wait to see if the problem resolves itself and conform to what is expected

**Factor 3**
9. Conform to other’s expectations of me
10. Try to forget the whole thing

**Factor 4**
11. Try to make myself feel better by eating, drinking and using drugs